

TABLE 1 LENGTH	
DART LONG LINE PART NUMBER CODE	DESCRIPTION
DALL-###-#	REPLACE FIRST # WITH LONG LINE TOTAL LENGTH IN FEET (MAX 200)

TABLE 3 OPTIONS	
DART LONG LINE PART NUMBER CODE	OPTION DESCRIPTION
DALL-##-A-#	WITH PEAR SHAPED LIFTING RING END AND PROTECTIVE JACKETS
DALL-##-B-#	WITHOUT PEAR SHAPED LIFTING RING END AND PROTECTIVE JACKETS
DALL-##-C-F	WITH PEAR SHAPED LIFTING RING END, WITHOUT PROTECTIVE JACKETS AND WITHOUT ELECTRICAL WIRE
DALL-##-D-F	WITHOUT PEAR SHAPED LIFTING RING END, WITHOUT PROTECTIVE JACKETS AND WITHOUT ELECTRICAL WIRE

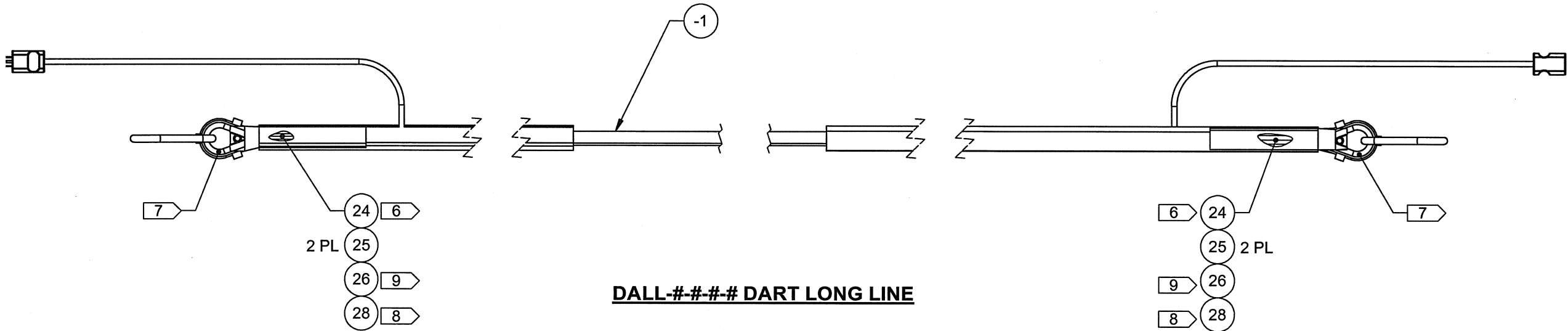
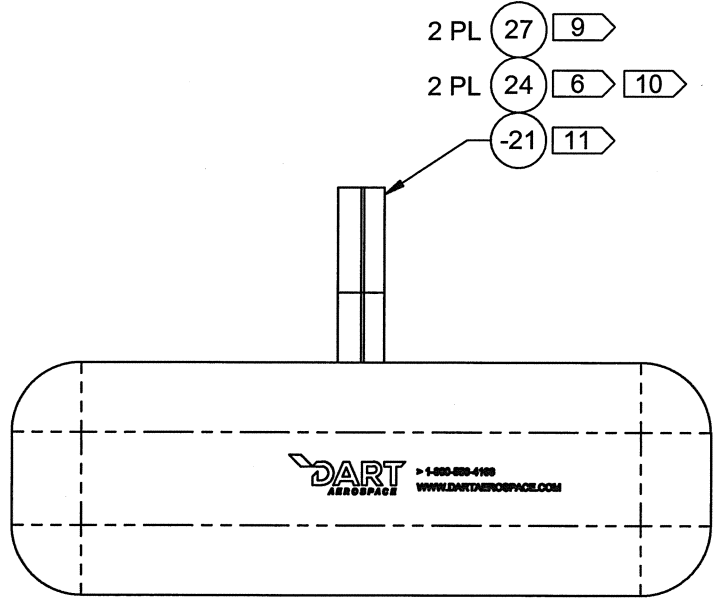
TABLE 2 CAPACITY	
DART LONG LINE PART NUMBER CODE	CAPACITY (LBS)
DALL-#-A-##	2500
DALL-#-B-##	3000
DALL-#-C-##	4400
DALL-#-D-##	5400
DALL-#-E-##	7300
DALL-#-F-##	9700
DALL-#-G-##	13 200

TABLE 4 ELECTRICAL	
DART LONG LINE PART NUMBER CODE	ELECTRICAL WIRE DESCRIPTION
DALL-###-A	3 CONDUCTOR 14 GA
DALL-###-B	3 CONDUCTOR 12 GA
DALL-###-C	4 CONDUCTOR 14 GA
DALL-###-D	6 CONDUCTOR 16 GA
DALL-###-E	8 CONDUCTOR 16 GA
DALL-###-F	NO ELECTRICAL
DALL-###-G	2 CONDUCTOR 14 GA
DALL-###-H	2 CONDUCTOR 12 GA

D	ADDED DALL-##-#G, DALL-##-#H, DALL-##-C-F AND DALL-##-D-F. ADDED ITEMS -22, -23, 25, 26 & 28. UPDATED NOTE 6. ADDED NOTES 7, 8 & 9. UPDATED TABLE 3 (OPTIONS) AND TABLE 4 (ELECTRICAL)		18-720	MBB
	-1 UPDATED NOTES 6 & 8. ADDED NOTE 11. REMOVED WHITE FABRIC LABEL NOTE			
	-3 UPDATED TABLE 7 (ROPE MATERIAL)			
	-5 REMOVED DIM. 1.0. ADDED DIM B. UPDATED TABLE 8 (THIMBLE ASSY AND END HARDWARE)			
	-6 REMOVED DIM 0.8. ADDED DIM FOR LENGTH. UPDATED TABLE 9 (RETAINER)			
	-8 REMOVED DIM. 1.35 POCKET WIRE			
	-13 UPDATED TABLE 10 (ORANGE JACKET)			
	-14 ADDED DIM 2.4 REF			
	-18 MATERIAL IS WEBBING NYLON BLACK, MIL-W-17337F, CL1, 1-1/2" WAS WEBBING NYLON BLACK, MIL-W-17337F, CL1, 1-1/2", NO FR TREAT			
	-20 UPDATED TABLE 11 (ELECTRICAL WIRE)			
C	TULMAR COMMENTS INCORPORATED		18-778	ML
B	TULMAR COMMENTS INCORPORATED, THIMBLE MATERIAL IS NOW STAINLESS, ELECTRICAL WIRE TABLE UPDATED, 15 700 LB LONGLINE REMOVED		18-770	VM
A	NEW ISSUE		18-585	VM
REV.	DESCRIPTION		ECN #	BY
DESIGN		MBB	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN		MBB		
CHECKED		KPT	TOOL PART #	
MFG. APPR.		DP	DALL-##-##	
APPROVED		<i>[Signature]</i>	REV. D SHEET 1 OF 25	
DATE 2019-05-09		TITLE		SCALE NTS
		DART LONG LINE		
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DALL - # - # - # - #
PART NUMBER = DALL- (LENGTH) - (CAPACITY P/N CODE) - (OPTION P/N CODE) - (ELECTRICAL P/N CODE)
EXAMPLE: DALL-100-A-A-A = DART LONG LINE, 100 FEET LONG, 2500 LBS CAPACITY, WITH LIFTING RING AND 3 CONDUCTOR 14 GAUGE WIRE AND BAG

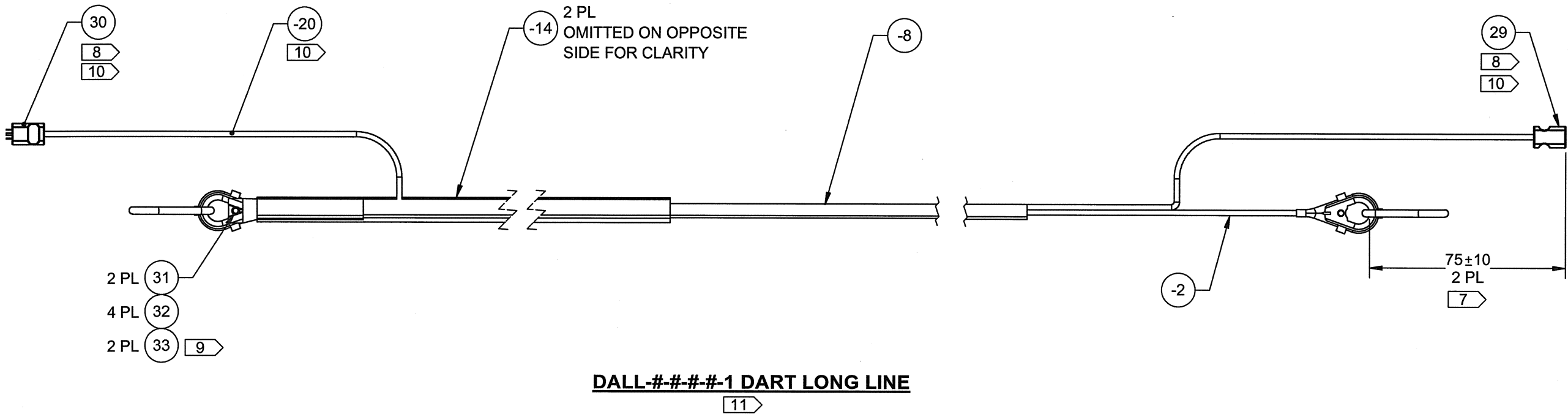
ITEM #	QTY	PART #	PART TITLE
-1	1	DALL-#-#-#-1	DART LONG LINE
-21	1	DALL-#-#-#-21	DART AEROSPACE BAG
24	4	McMaster#1632T22 OR EQUIV.	ID TAG
25	4	McMaster#3896T31 OR EQUIV.	ALUMINUM WIRE ROPE COMPRESSION SLEEVE 1/16" DIA. X 3/8" LG.
26	A/R	McMaster#6820A12 OR EQUIV.	CLEAR HEAT-SHRINK TAPE 3/4" WD.
27	2	McMaster#90905A673 OR EQUIV.	SS SPLIT RING 15/16" ID. X 1-1/16" OD. X 1/8" THK.
28	A/R	CARR LANE#CL-2-C	NYLON COATED STEEL LANYARD 1/16" DIA



NOTES:
1) MATERIAL: N/A
2) HEAT TREAT: N/A
3) FINISH: N/A
4) TOLERANCES: X.X = +/- 0.1" / +/- 1°
X.XX = +/- 0.01" / +/- 0.5°
X.XXX = +/- 0.005" / +/- 0.1°
X.XXXX = +/- 0.0005" / +/- 0.05°
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/-0.005"
5) UNITS: INCHES / LBS UNLESS OTHERWISE NOTED
6) IDENTIFICATION: DOT MARK THE FOLLOWING INFO ONTO ITEM 24:
P/N: DALL-#-#-#
LENGTH: XXX FT (REFER TO TABLE 1)
CAPACITY: XX XXX LBS (REFER TO TABLE 2)
S/N: XXXXXX (REFER TO S/N ENGRAVED ON THIMBLES)
EIS DATE: MM/DD/YYYY (EIS DATE IS THE SHIPPING DATE)
7) IDENTIFICATION: MACHINE ENGRAVE, OR DOT MARK, OR STAMP USING 0.25" STAMP, S/N ONTO EACH THIMBLE
8) ASSEMBLED LANYARD LENGTH MUST BE 5" +/- 1". LANYARD MUST BE INSTALLED WITH ID TAG TO THE BASE OF THE THIMBLE AND PASS THROUGH THE ROPE STRANDS IN ORDER TO BE SECURED. BLUE JACKET (IF APPLICABLE) VELCRO NEED TO BE FASTENED OVER ASSEMBLED LANYARD AND ID TAG. THE ID TAG MUST NOT MOVE FREELY ONCE INSTALLED.
9) COVER ID TAG AND SLEEVES USING ITEM 26 TO PREVENT DAMAGE TO THE ROPE
10) ATTACH ONE ID TAG TO THE BAG ZIPPER WITH THE SPLIT RING AND PLACE ONE ID TAG AND SPLIT RING INTO THE BAG SIDE POCKET
11) COIL LONG LINE INTO BAG

DESIGN	MBB	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	MBB		
CHECKED	KPT	TOOL PART #	REV. D
MFG. APPR.	DP	DALL-#-#-#	SHEET 2 OF 25
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DATE 2019-05-09		DART LONG LINE	NTS
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ITEM #	QTY	PART #	PART TITLE
-2	1	DALL-####-2	ROPE ASSY
-8	1	DALL-####-8	ORANGE JACKET ASSY
-14	2	DALL-####-14	BLUE JACKET ASSY
-20	A/R	DALL-####-20	ELECTRICAL WIRE
29	1	PASS & SEYMOUR #PS5969Y or McMaster#7216K6	3 PRONG FEMALE SPADE PLUG
30	1	PASS & SEYMOUR #PS5965Y or McMaster#7216K5	3 PRONG MALE SPADE PLUG
31	2	AN3C10A	BOLT
32	4	NAS1149C0363R	FLAT WASHER
33	2	MS21044C3	HEX NUT



- NOTES:
- 1) MATERIAL: N/A
 - 2) HEAT TREAT: N/A
 - 3) FINISH: N/A
 - 4) TOLERANCES: X.X = +/- 0.1" / +/- 1°
X.XX = +/- 0.01" / +/- 0.5°
X.XXX = +/- 0.005" / +/- 0.1°
X.XXXX = +/- 0.0005" / +/- 0.05°
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/-0.005"
 - 5) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 6) IDENTIFICATION: N/A
 - 7) CUT ELECTRICAL WIRE TO LENGTH AS SHOWN
 - 8) INSTALL ITEMS 29 AND 30 USING INDUSTRY STANDARD TECHNIQUES. ATTACH GREEN WIRE (IF APPLICABLE) TO THE GROUND PIN, ATTACH WHITE WIRE TO THE NARROW BLADE TERMINAL, ATTACH THE BLACK WIRE TO THE WIDE BLADE TERMINAL. ONLY INCLUDE ITEMS 29 AND 30 WITH DALL-####-A, DALL-####-B, DALL-####-G AND DALL-####-H
 - 9) TIGHTEN NUT UNTIL IT CONTACTS FABRIC (IT IS ACCEPTABLE TO USE A LONGER OR SHORTER BOLT, 1-4 BOLT THREADS MUST BE EXPOSED)
 - 10) ELECTRICAL CABLE MUST BE FREE OF DAMAGE OR NICKS TO THE INSULATION, ELECTRICAL CONNECTORS MUST BE SECURELY INSTALLED. PERFORM CONTINUITY CHECK TO ENSURE THERE IS NO SHORT AND, IF APPLICABLE THAT CABLES ARE CONNECTED PROPERLY
 - 11) ITEMS -8, -14, -20, AND 29 TO 33 NOT INCLUDED FOR DALL-####-C-F AND DALL-####-D-F

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DRAWN	MBB		
CHECKED	KPT	TOOL PART #	REV. D
MFG. APPR.	DP	DALL-####	SHEET 3 OF 25
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DATE 2019-05-09		DART LONG LINE	NTS
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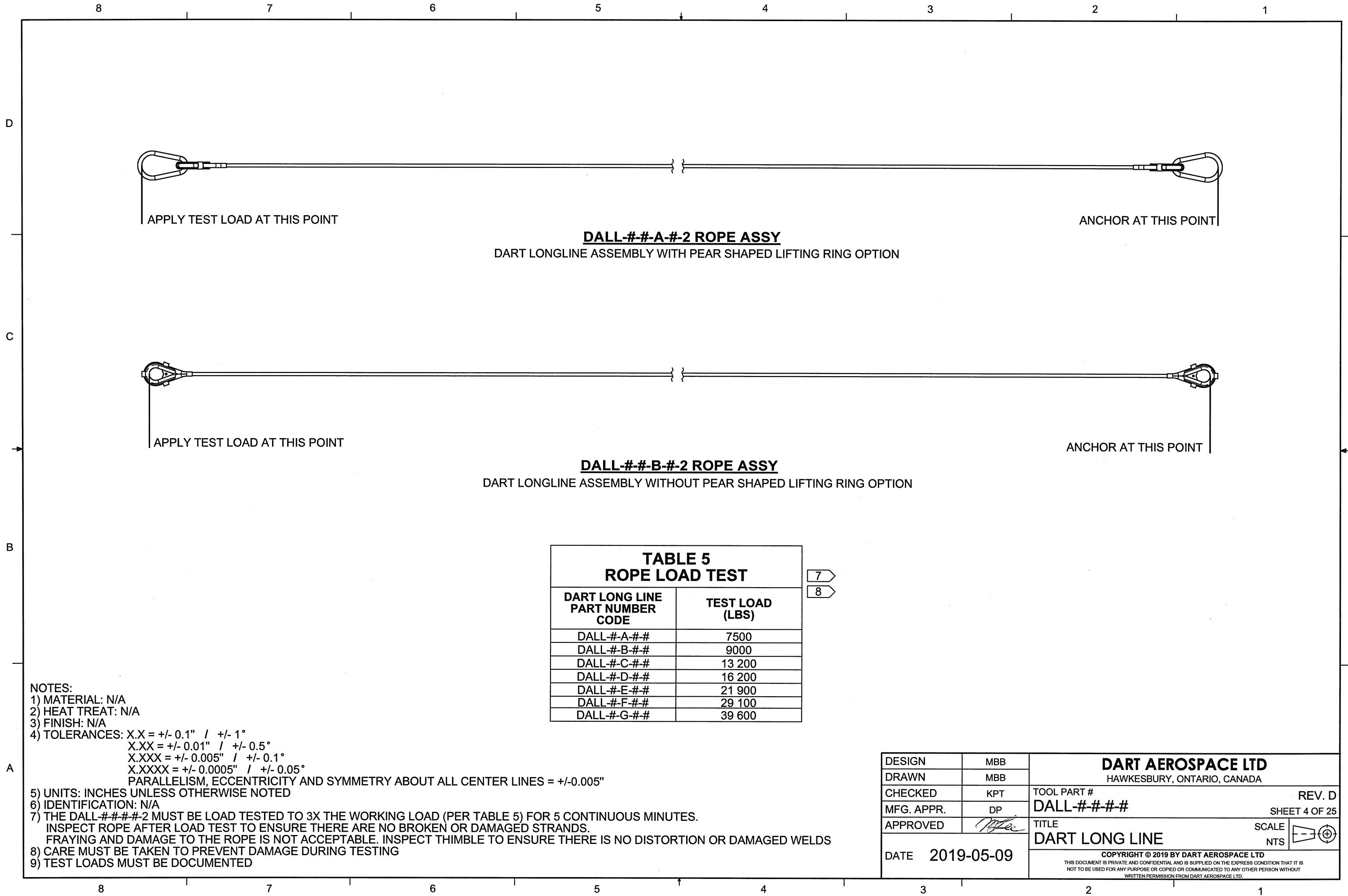
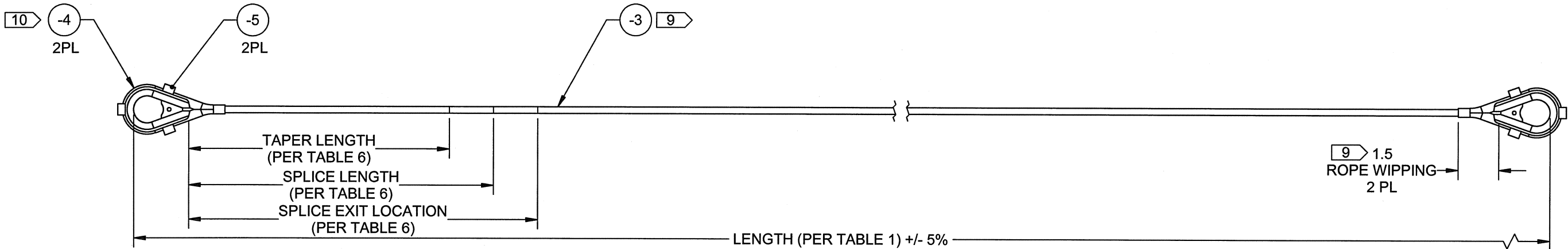


TABLE 5 ROPE LOAD TEST	
DART LONG LINE PART NUMBER CODE	TEST LOAD (LBS)
DALL-#-A-##	7500
DALL-#-B-##	9000
DALL-#-C-##	13 200
DALL-#-D-##	16 200
DALL-#-E-##	21 900
DALL-#-F-##	29 100
DALL-#-G-##	39 600

- NOTES:
- 1) MATERIAL: N/A
 - 2) HEAT TREAT: N/A
 - 3) FINISH: N/A
 - 4) TOLERANCES: X.X = +/- 0.1" / +/- 1°
X.XX = +/- 0.01" / +/- 0.5°
X.XXX = +/- 0.005" / +/- 0.1°
X.XXXX = +/- 0.0005" / +/- 0.05°
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/-0.005"
 - 5) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 6) IDENTIFICATION: N/A
 - 7) THE DALL-###-#-2 MUST BE LOAD TESTED TO 3X THE WORKING LOAD (PER TABLE 5) FOR 5 CONTINUOUS MINUTES.
INSPECT ROPE AFTER LOAD TEST TO ENSURE THERE ARE NO BROKEN OR DAMAGED STRANDS.
FRAYING AND DAMAGE TO THE ROPE IS NOT ACCEPTABLE. INSPECT THIMBLE TO ENSURE THERE IS NO DISTORTION OR DAMAGED WELDS
 - 8) CARE MUST BE TAKEN TO PREVENT DAMAGE DURING TESTING
 - 9) TEST LOADS MUST BE DOCUMENTED

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DRAWN	MBB		
CHECKED	KPT	TOOL PART #	REV. D
MFG. APPR.	DP	DALL-##-##	SHEET 4 OF 25
APPROVED		TITLE	SCALE
DATE 2019-05-09		DART LONG LINE	NTS
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ITEM #	QTY	PART #	PART TITLE
-3	1	DALL-###-3	ROPE
-4	2	DALL-###-4	FABRIC WEARPAD
-5	2	DALL-###-5	THIMBLE ASSY



DALL-###-2 ROPE ASSY
(SHOWN ASSEMBLED)

TABLE 6
FABRICATION MEASURMENTS

DART LONG LINE PART NUMBER CODE	SPLICE LENGTH (INCHES)	TAPER LENGTH (INCHES)	SPLICE EXIT LOCATION (INCHES)	THIMBLE CIRCUMFERENCE (INCHES)
DALL-#-A-##	25	8	30	9
DALL-#-B-##	30	10	35	10
DALL-#-C-##	35	10	40	10
DALL-#-D-##	40	13	50	10
DALL-#-E-##	45	13	55	14
DALL-#-F-##	50	16	65	14
DALL-#-G-##	60	20	75	17

NOTES:

- 1) MATERIAL: N/A
- 2) HEAT TREAT: N/A
- 3) FINISH: N/A
- 4) TOLERANCES: X.X = +/- 0.1" / +/- 1°
X.XX = +/- 0.01" / +/- 0.5°
X.XXX = +/- 0.005" / +/- 0.1°
X.XXXX = +/- 0.0005" / +/- 0.05°
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/-0.005"
- 5) UNITS: INCHES UNLESS OTHERWISE NOTED
- 6) REMOVE ALL SHARP EDGES
- 7) IDENTIFICATION: N/A
- 8) ROPE CUT LENGTH FORMULA = (SPLICE LENGTH PER TABLE 6 + 3" + THIMBLE CIRCUMFERENCE PER TABLE 6) + (REQUIRED TOTAL LENGTH - 1%).
- 9) PREPARE THE ROPE SPLICE AS FOLLOWS:
 - A) MEASURING FROM THE END OF THE ROPE, MARK THE SPLICE LENGTH, TAPER LENGTH AND EXIT LOCATION PER TABLE 6
 - B) PASS THE ROPE THROUGH THE THIMBLE AND FABRIC WEARPAD UNTIL THE SPLICE LENGTH MARK IS 1.5" FROM THE BASE OF THE THIMBLE
 - C) MAKE A MARK 1.5" FROM THE BASE OF THE THIMBLE ON THE OTHER SIDE OF THE ROPE (BESIDE THE FIRST SPLICE LENGTH MARK)
 - D) PLACE THE END OF THE ROPE IN THE SPLICING FID
 - E) AT THE LOCATION MARKED AT STEP "C", CAREFULLY INSERT THE SPLICING FID IN THE CENTER OF THE ROPE
 - F) WORK THE SPLICING FID ALONG THE HOLLOW CENTER OF THE ROPE AND EXIT AT THE SPLICE EXIT LOCATION MARK MADE EARLIER
 - G) REMOVE THE SPLICING FID
 - H) MARK EVERY FOURTH "S" / "Z" STRAND STARTING AT THE TAPER MARK. CUT AND REMOVE THE MARKED STRANDS
 - I) MARK AND THEN CUT THE NEXT THREE CONSECUTIVE STRANDS NEAR THE END OF THE ROPE
 - J) CUT THE TIP OF THE REMAINING STRANDS AT AN ANGLE
 - K) CAREFULLY SMOOTH THE ROPE AWAY FROM THE THIMBLE (THE TAPER WILL NOW BE INSIDE OF THE ROPE)
 - L) ENSURE THE MARKS CLOSEST TO THE THIMBLE ARE ALIGNED (APPROXIMATELY 1.5" FROM THE BASE OF THE THIMBLE)
 - M) ONCE THE ROPE SPLICE IS COMPLETE THE ROPE MUST BE TIGHTLY "WIPPED" AT APPROXIMATELY 1.5" FROM THE BASE OF THE THIMBLE USING 5-10 WRAPS OF 1/16" CORD
 - N) REPEAT THE STEPS ABOVE ON THE OPPOSITE SIDE OF THE LONGLINE
- 10) THE -4 FABRIC WEARPAD MUST BE MANUFACTURED FROM ABRASION RESISTANT NYLON OR ARAMID FABRIC. THE WEARPAD MUST TIGHTLY FIT AROUND THE ROPE AND EXTEND 1.0" BELOW THE BASE OF THE THIMBLE

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MFG. APPR.	DP	DALL-###-#	SHEET 5 OF 25
APPROVED		TITLE	SCALE
DATE 2019-05-09		DART LONG LINE	NTS
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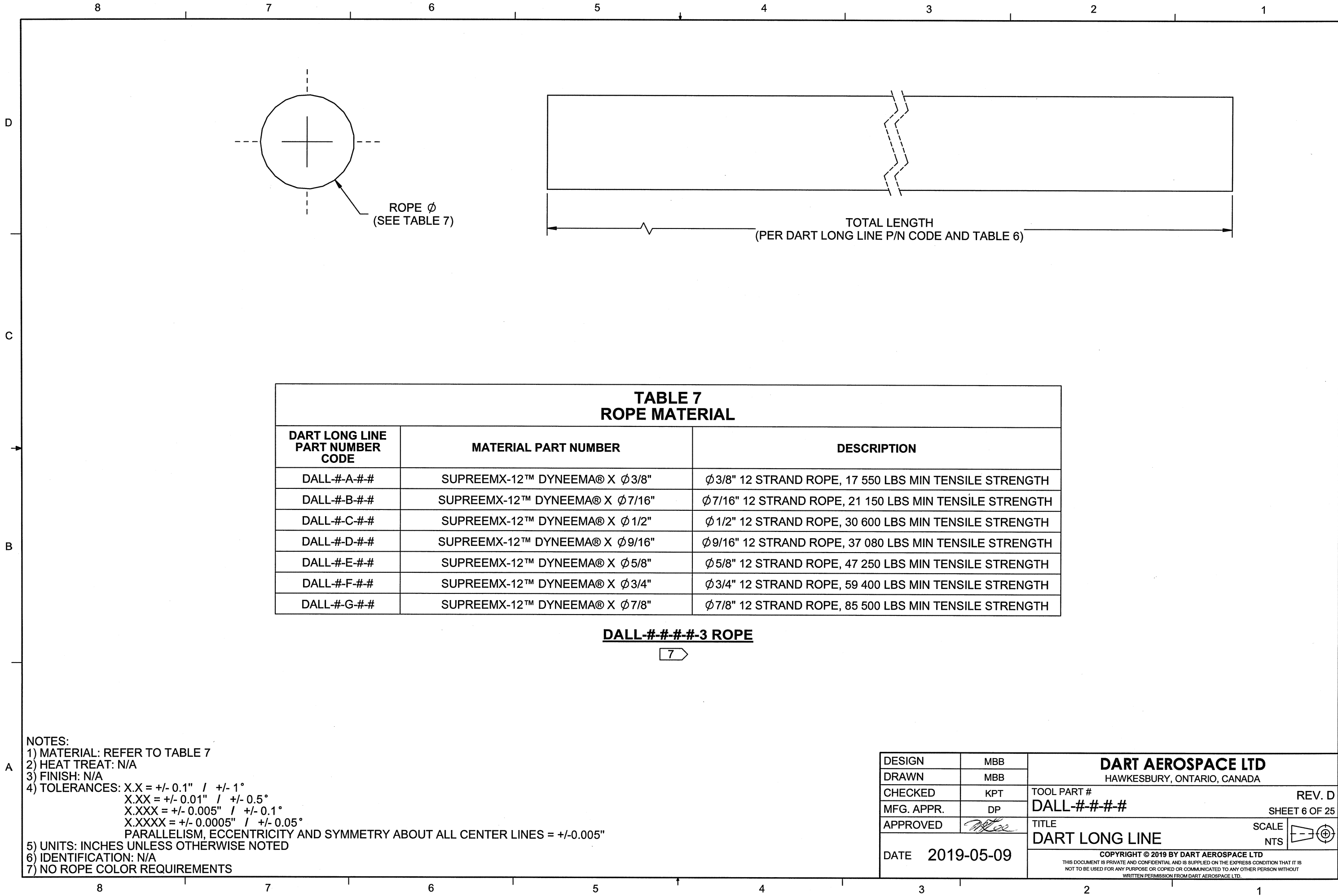
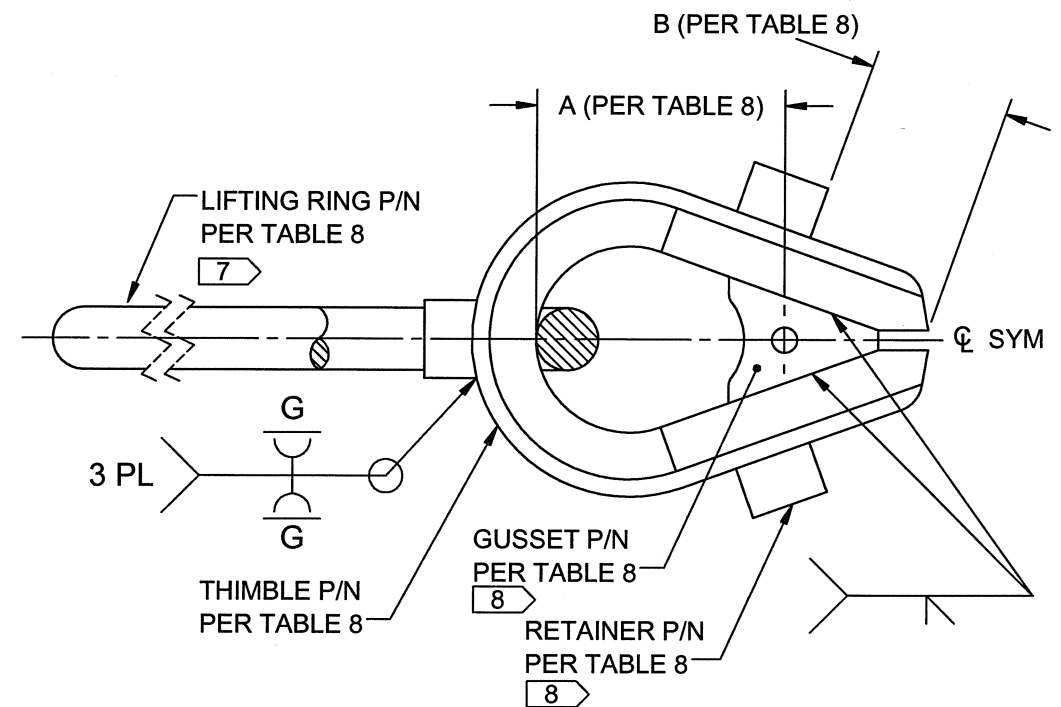


TABLE 8
THIMBLE ASSY AND END HARDWARE
(TO USE TABLE SELECT APPROPRIATE DART LONG LINE PART NUMBER CODE IN COLUMN ONE THEN MANUFACTURE THIMBLE ASSY USING ITEMS IN THE SAME ROW)

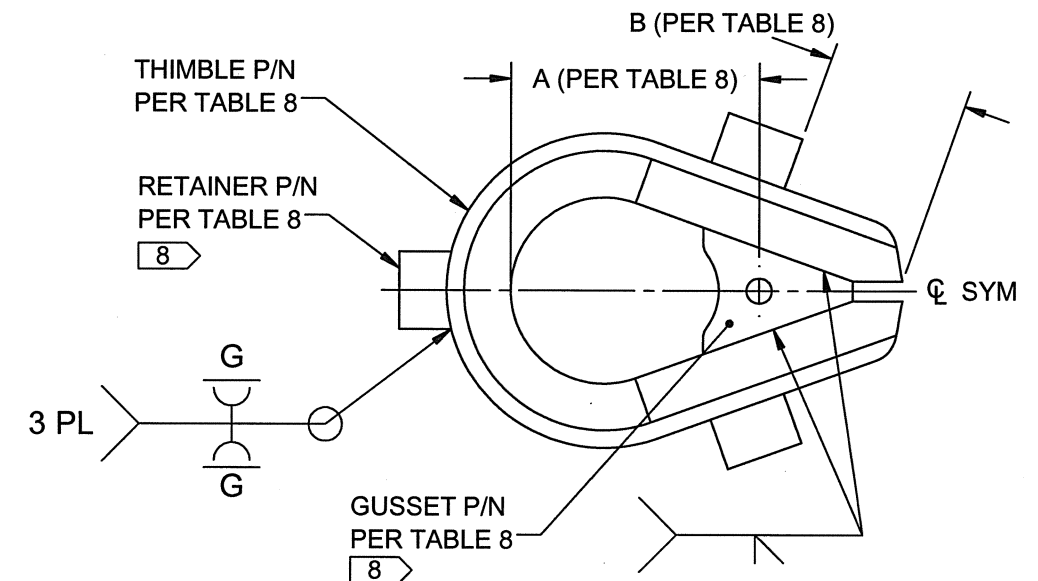
ASSEMBLY INFO								
DART LONG LINE PART NUMBER CODE	THIMBLE ASSY PART NUMBER	DESCRIPTION	RETAINER PART NUMBER	GUSSET PART NUMBER	PURCHASE THIMBLE PART NUMBER (McMASTER CARR)	PURCHASE LIFTING RING PART NUMBER (McMASTER CARR)	DIMENSION A ±0.05"	DIMENSION B ±0.13"
DALL-#-A-A-# DALL-#-A-C-F	DALL-#-A-A-#5	THIMBLE WITH 1/2" PEAR RING	DALL-#-A-A-#6	DALL-####-7	(9/16") 3495T41 OR EQUIVALENT	3570T34 OR EQUIVALENT	2.00	1.10
DALL-#-B-A-# DALL-#-B-C-F	DALL-#-A-A-#5	THIMBLE WITH 1/2" PEAR RING	DALL-#-A-A-#6	DALL-####-7	(9/16") 3495T41 OR EQUIVALENT	3570T34 OR EQUIVALENT	2.00	1.10
DALL-#-C-A-# DALL-#-C-C-F	DALL-#-C-A-#5	THIMBLE WITH 3/4" PEAR RING	DALL-#-C-A-#6	DALL-####-23	(5/8") 3495T51 OR EQUIVALENT	3570T35 OR EQUIVALENT	2.60	1.20
DALL-#-D-A-# DALL-#-D-C-F	DALL-#-C-A-#5	THIMBLE WITH 3/4" PEAR RING	DALL-#-C-A-#6	DALL-####-23	(5/8") 3495T51 OR EQUIVALENT	3570T35 OR EQUIVALENT	2.60	1.20
DALL-#-E-A-# DALL-#-E-C-F	DALL-#-E-A-#5	THIMBLE WITH 3/4" PEAR RING	DALL-#-E-A-#6	DALL-####-23	(3/4") 3495T49 OR EQUIVALENT	3570T35 OR EQUIVALENT	3.00	1.30
DALL-#-F-A-# DALL-#-F-C-F	DALL-#-F-A-#5	THIMBLE WITH 3/4" PEAR RING	DALL-#-F-A-#6	DALL-####-23	(7/8") 3495T42 OR EQUIVALENT	3570T35 OR EQUIVALENT	3.40	1.40
DALL-#-G-A-# DALL-#-G-C-F	DALL-#-G-A-#5	THIMBLE WITH 3/4" PEAR RING	DALL-#-F-A-#6	DALL-####-22	(1") 3495T43 OR EQUIVALENT	3570T35 OR EQUIVALENT	3.50	1.50
DALL-#-A-B-# DALL-#-A-D-F	DALL-#-A-B-#5	THIMBLE ONLY	DALL-#-A-A-#6	DALL-####-7	(9/16") 3495T41 OR EQUIVALENT	N/A	2.00	1.10
DALL-#-B-B-# DALL-#-B-D-F	DALL-#-A-B-#5	THIMBLE ONLY	DALL-#-A-A-#6	DALL-####-7	(9/16") 3495T41 OR EQUIVALENT	N/A	2.00	1.10
DALL-#-C-B-# DALL-#-C-D-F	DALL-#-C-B-#5	THIMBLE ONLY	DALL-#-C-A-#6	DALL-####-23	(5/8") 3495T51 OR EQUIVALENT	N/A	2.60	1.20
DALL-#-D-B-# DALL-#-D-D-F	DALL-#-C-B-#5	THIMBLE ONLY	DALL-#-C-A-#6	DALL-####-23	(5/8") 3495T51 OR EQUIVALENT	N/A	2.60	1.20
DALL-#-E-B-# DALL-#-E-D-F	DALL-#-E-B-#5	THIMBLE ONLY	DALL-#-E-A-#6	DALL-####-23	(3/4") 3495T49 OR EQUIVALENT	N/A	3.00	1.30
DALL-#-F-B-# DALL-#-F-D-F	DALL-#-F-B-#5	THIMBLE ONLY	DALL-#-F-A-#6	DALL-####-23	(7/8") 3495T42 OR EQUIVALENT	N/A	3.40	1.40
DALL-#-G-B-# DALL-#-G-D-F	DALL-#-G-B-#5	THIMBLE ONLY	DALL-#-F-A-#6	DALL-####-22	(1") 3495T43 OR EQUIVALENT	N/A	3.50	1.50

NOTES:

- 1) MATERIAL: N/A
- 2) HEAT TREAT: N/A
- 3) FINISH: N/A
- 4) TOLERANCES: X.X = +/- 0.1" / +/- 1°
X.XX = +/- 0.01" / +/- 0.5°
X.XXX = +/- 0.005" / +/- 0.1°
X.XXXX = +/- 0.0005" / +/- 0.05°
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/-0.005"
- 5) UNITS: INCHES UNLESS OTHERWISE NOTED
- 6) REMOVE ALL SHARP EDGES, BURRS, AND WELD SPATTERS
- 7) SPREAD THE THIMBLE APART AS NECESSARY AT THE OPENING IN ORDER TO INSTALL THE LIFTING RING, BEND BACK INTO POSITION ONCE THE LIFTING RING IS INSTALLED
- 8) TRIM/GRIND THE DALL-####-6 RETAINER AND THE DALL-####-7 OR DALL-####-22 OR DALL-####-23 GUSSET TO MATCH THIMBLE PROFILE
- 9) IT IS ACCEPTABLE TO BEND THE THIMBLE IN / OUT TO PERMIT INSTALLATION OF THE DALL-####-7 OR DALL-####-22 OR DALL-####-23 GUSSET
- 10) IT IS ACCEPTABLE TO BEND THE RETAINER IN / OUT TO PERMIT TO MATCH THIMBLE PROFILE

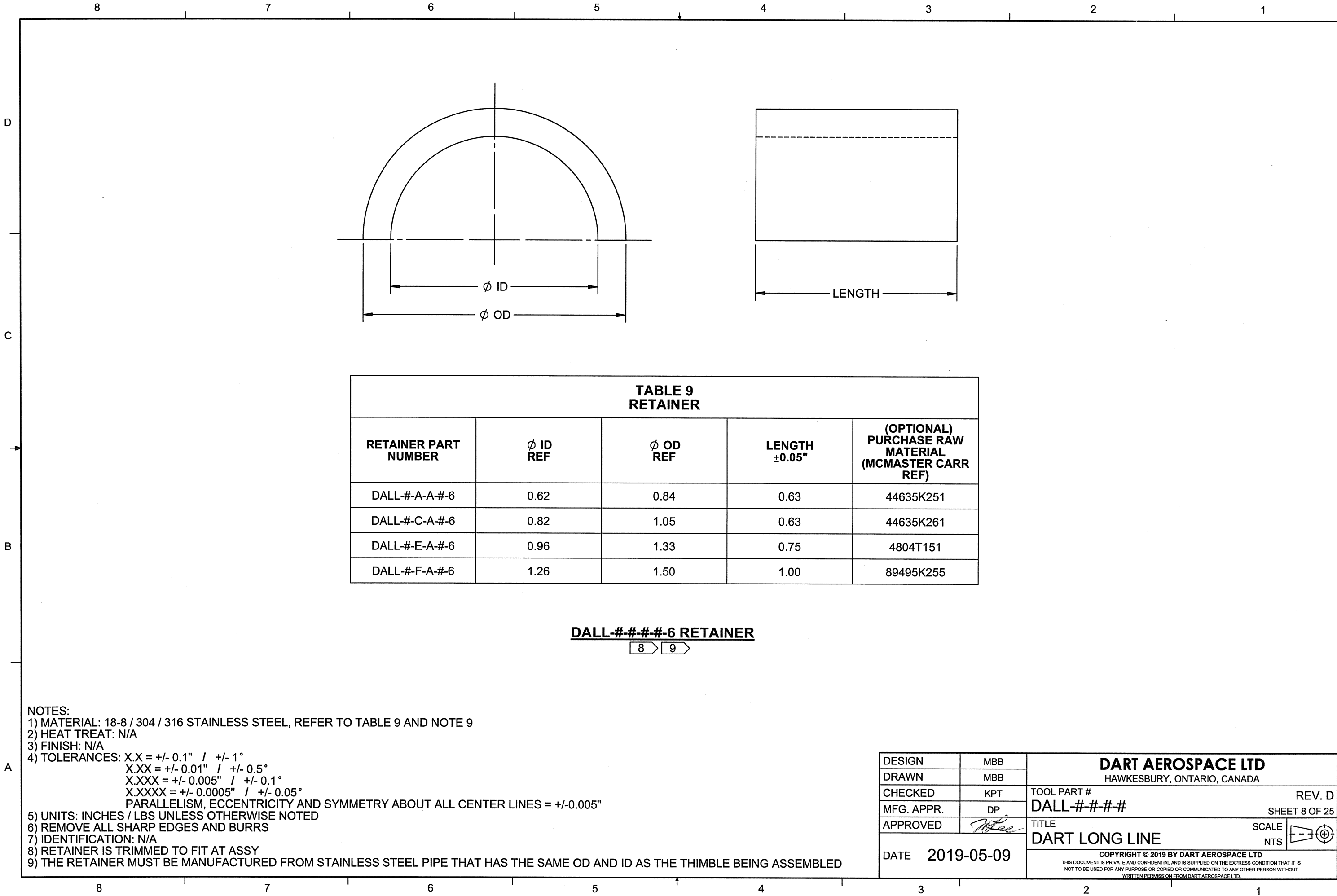


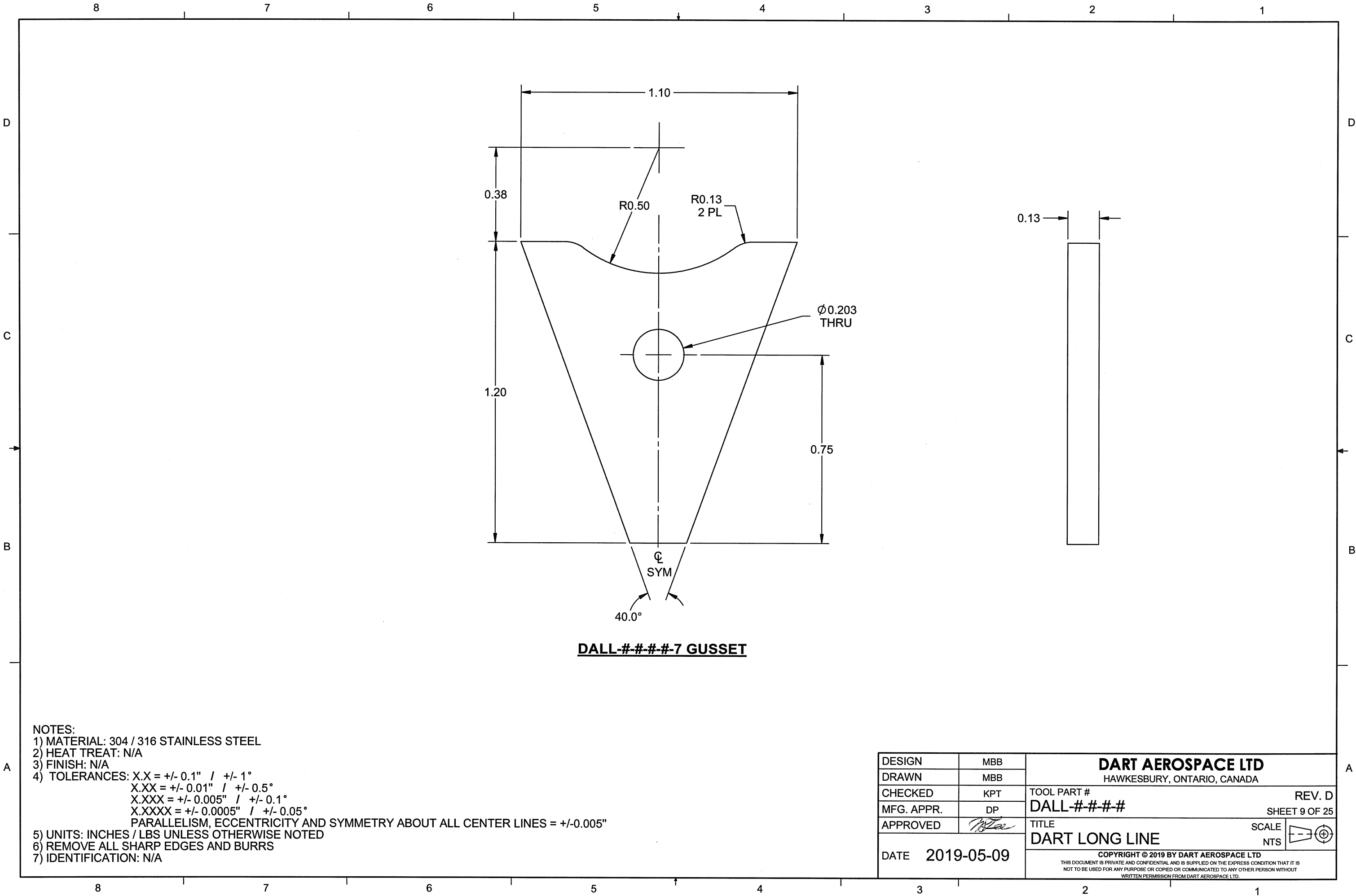
DALL-##-A-#-5 THIMBLE ASSY
DART LONGLINE ASSEMBLY WITH PEAR SHAPED LIFTING RING OPTION
9 10



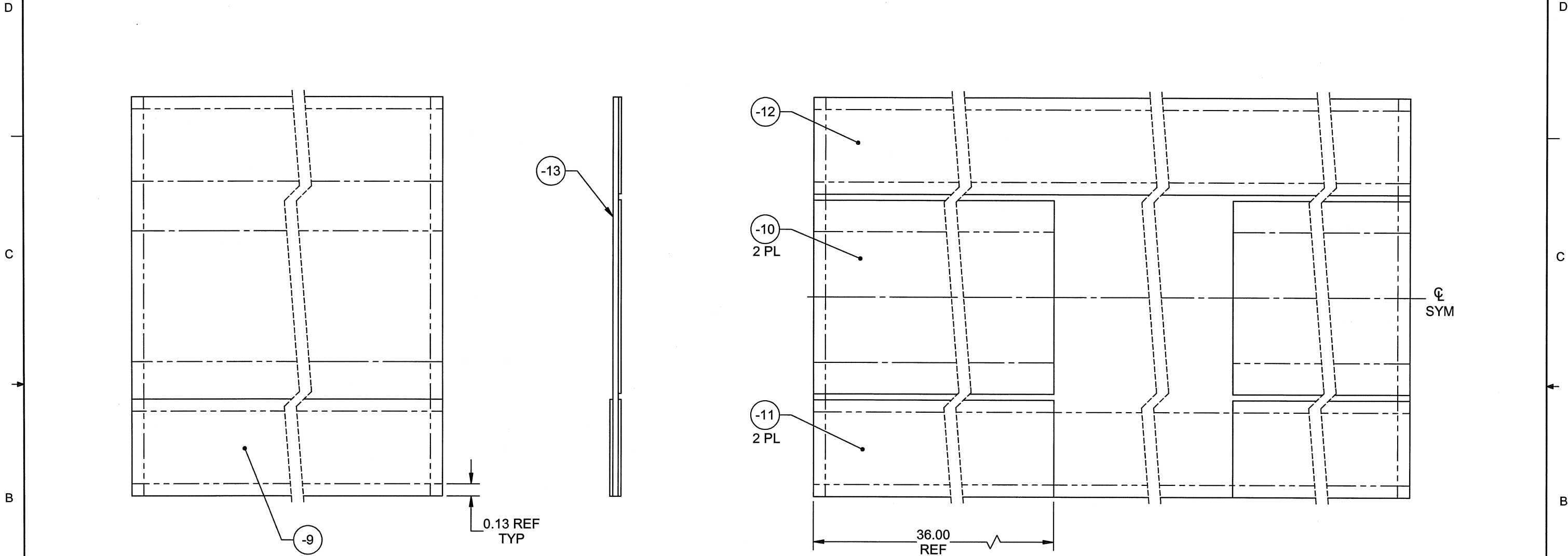
DALL-##-B-#-5 THIMBLE ASSY
DART LONGLINE ASSEMBLY WITHOUT PEAR SHAPED LIFTING RING OPTION
9 10

DESIGN	MBB	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	MBB		
CHECKED	KPT	TOOL PART #	REV. D
MFG. APPR.	DP	DALL-##-##	SHEET 7 OF 25
APPROVED	<i>[Signature]</i>	TITLE	SCALE
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ITEM #	QTY	PART #	PART TITLE
-9	1	DALL-####-9	FASTENER LOOP
-10	2	DALL-####-10	FASTENER HOOK
-11	2	DALL-####-11	FASTENER HOOK
-12	1	DALL-####-12	FASTENER HOOK
-13	1	DALL-####-13	ORANGE JACKET



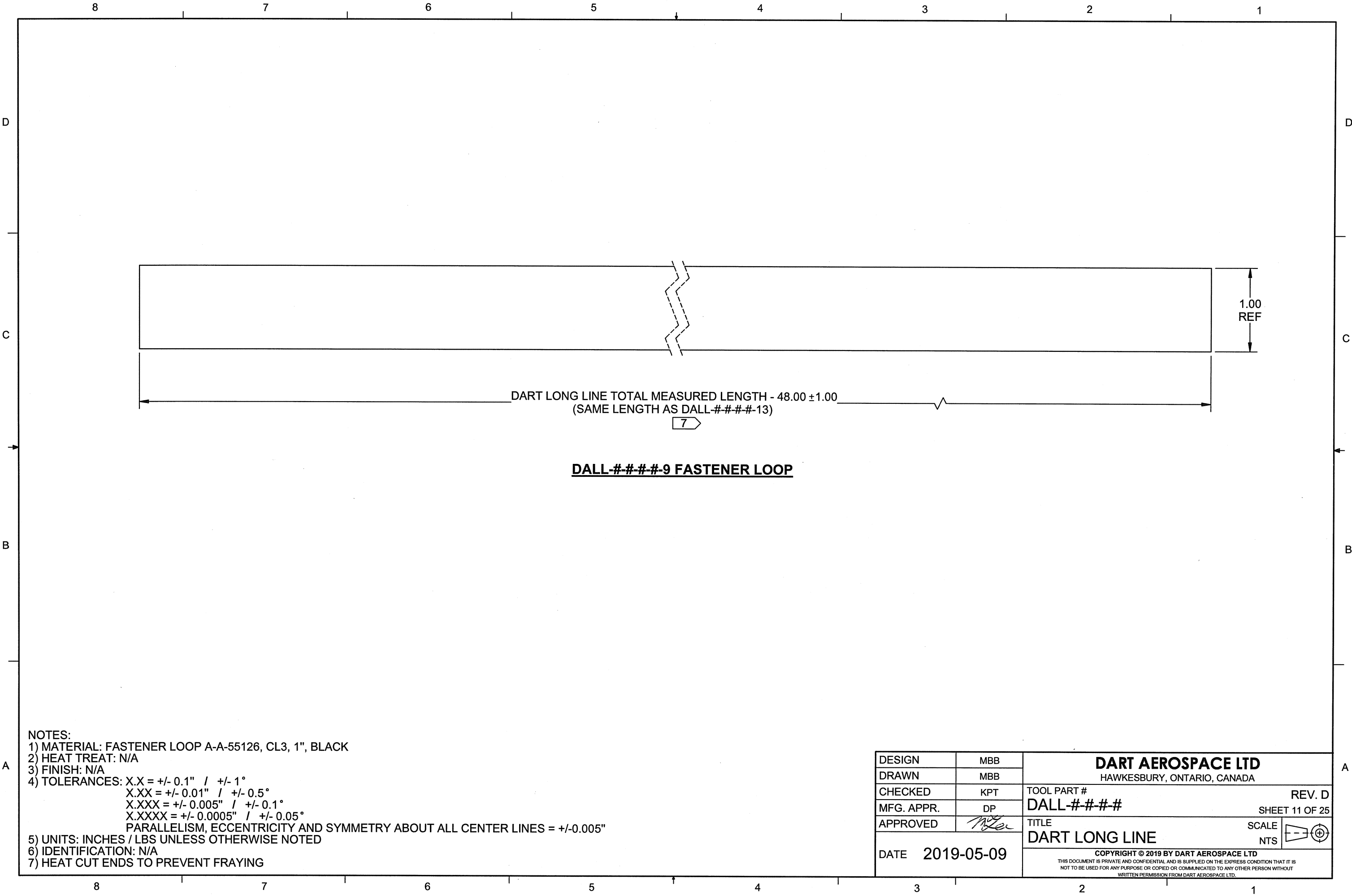
DALL-####-8 ORANGE JACKET ASSY

8 9 10

NOTES:

- 1) MATERIAL: N/A
- 2) HEAT TREAT: N/A
- 3) FINISH: N/A
- 4) TOLERANCES: X.X = +/- 0.1" / +/- 1°
X.XX = +/- 0.01" / +/- 0.5°
X.XXX = +/- 0.005" / +/- 0.1°
X.XXXX = +/- 0.0005" / +/- 0.05°
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/- 0.005"
- 5) UNITS: INCHES / LBS UNLESS OTHERWISE NOTED
- 6) IDENTIFICATION: N/A
- 7) SEW ITEMS TOGETHER AS SHOWN
- 8) STITCHING TO BE IAW ASTM D6193, TYPE 301, 6-10 STITCHES PER INCH, MINIMUM 0.5" BACKSTITCH, 0.5" SEAM ALLOWANCE, 0.5" TURNBACKS WHERE SHOWN, 0.13 ± 0.10" FROM EDGE, ADDITIONAL ROWS OF SEWING ARE ACCEPTABLE TO ASSIST IN ASSEMBLY
- 9) PHANTOM LINES REPRESENT STITCHING
- 10) FASTNER LOOP/HOOK MUST BE ALIGNED WITH END OF ORANGE JACKET BEFORE SEWING

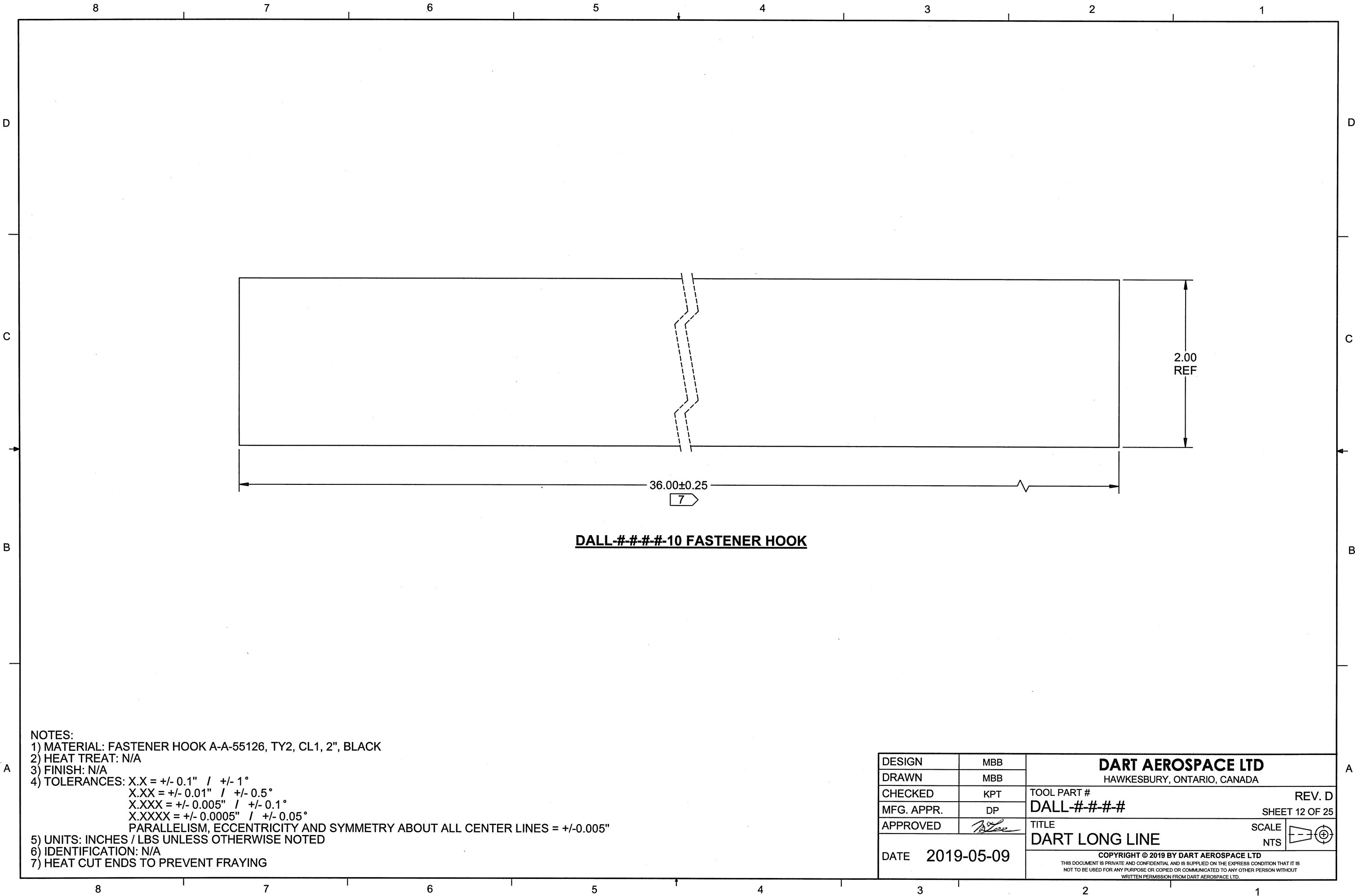
DESIGN	MBB	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	MBB		
CHECKED	KPT	TOOL PART #	REV. D
MFG. APPR.	DP	DALL-####	SHEET 10 OF 25
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DATE 2019-05-09		DART LONG LINE	NTS
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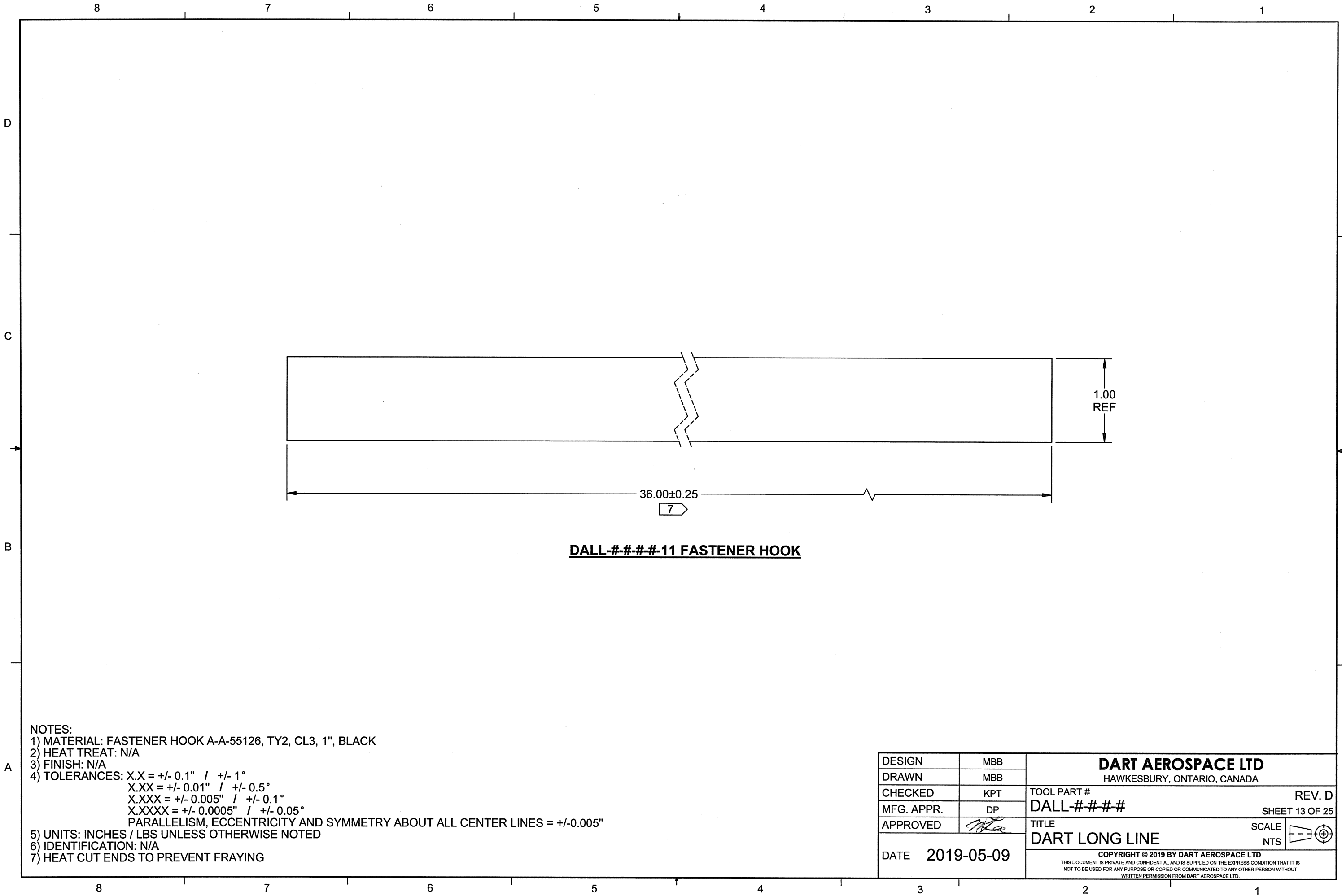


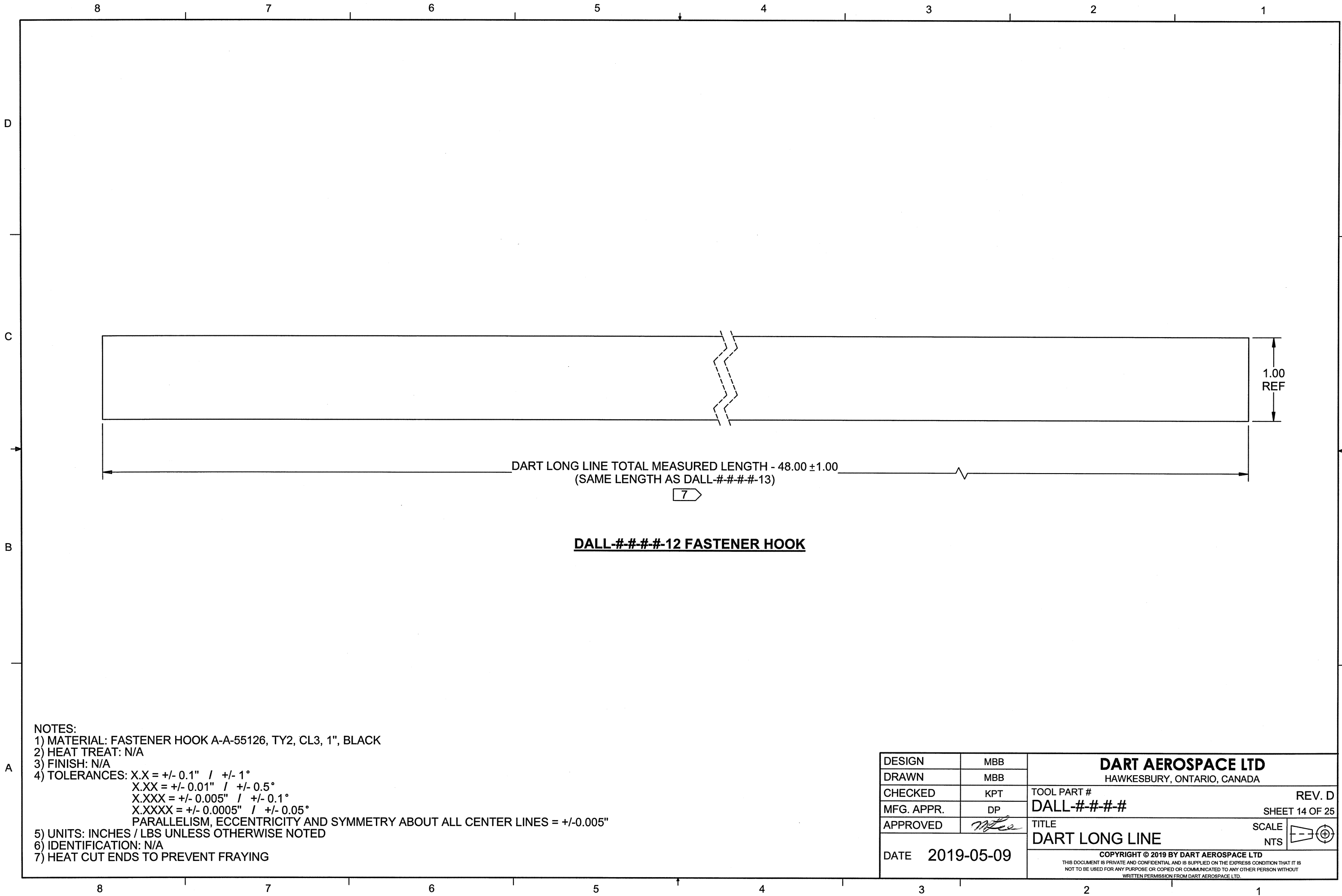
DALL-####-9 FASTENER LOOP

NOTES:
1) MATERIAL: FASTENER LOOP A-A-55126, CL3, 1", BLACK
2) HEAT TREAT: N/A
3) FINISH: N/A
4) TOLERANCES: X.X = +/- 0.1" / +/- 1°
X.XX = +/- 0.01" / +/- 0.5°
X.XXX = +/- 0.005" / +/- 0.1°
X.XXXX = +/- 0.0005" / +/- 0.05°
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/-0.005"
5) UNITS: INCHES / LBS UNLESS OTHERWISE NOTED
6) IDENTIFICATION: N/A
7) HEAT CUT ENDS TO PREVENT FRAYING

DESIGN	MBB	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	MBB		
CHECKED	KPT	TOOL PART #	REV. D
MFG. APPR.	DP	DALL-####	SHEET 11 OF 25
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DATE 2019-05-09		DART LONG LINE	NTS
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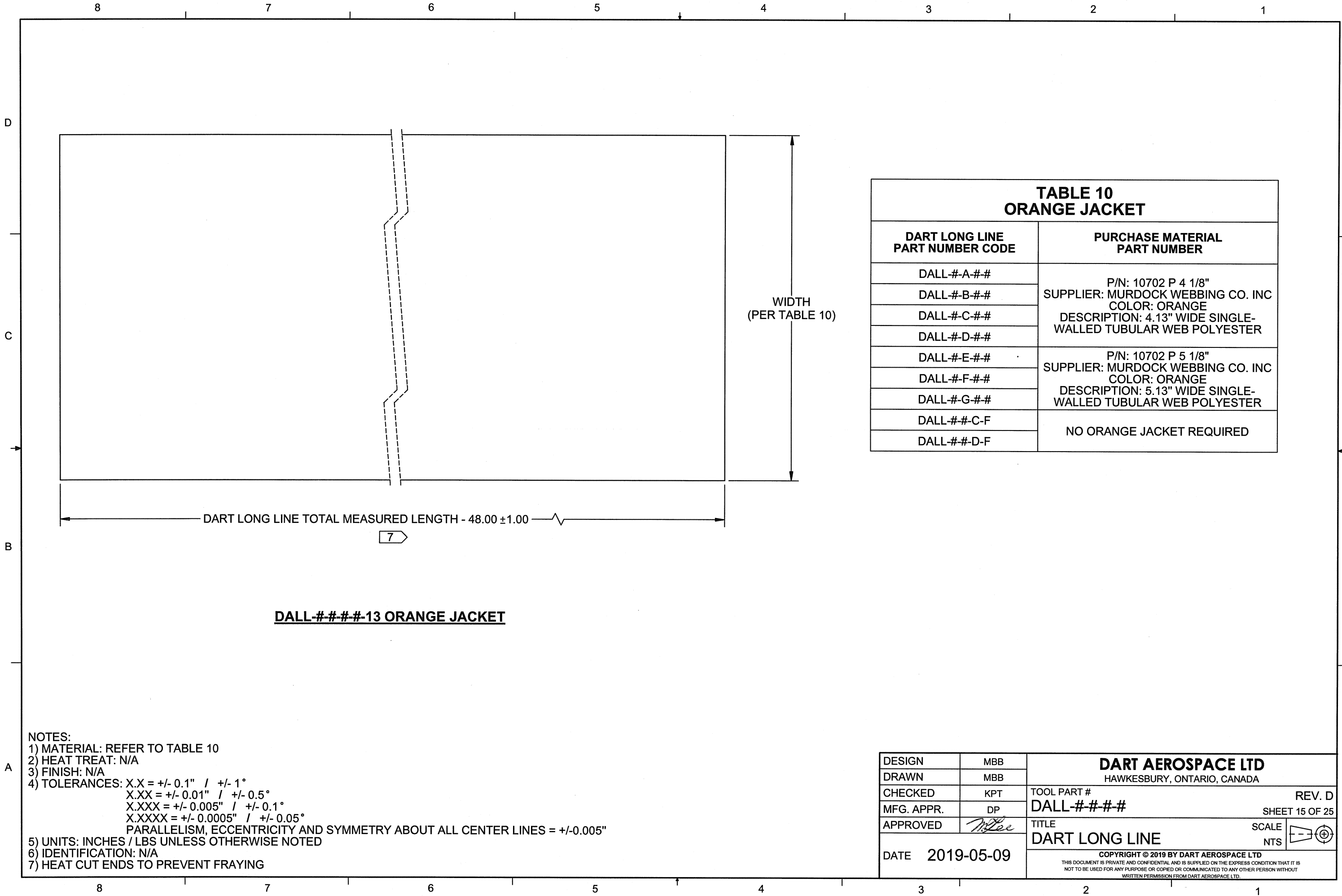


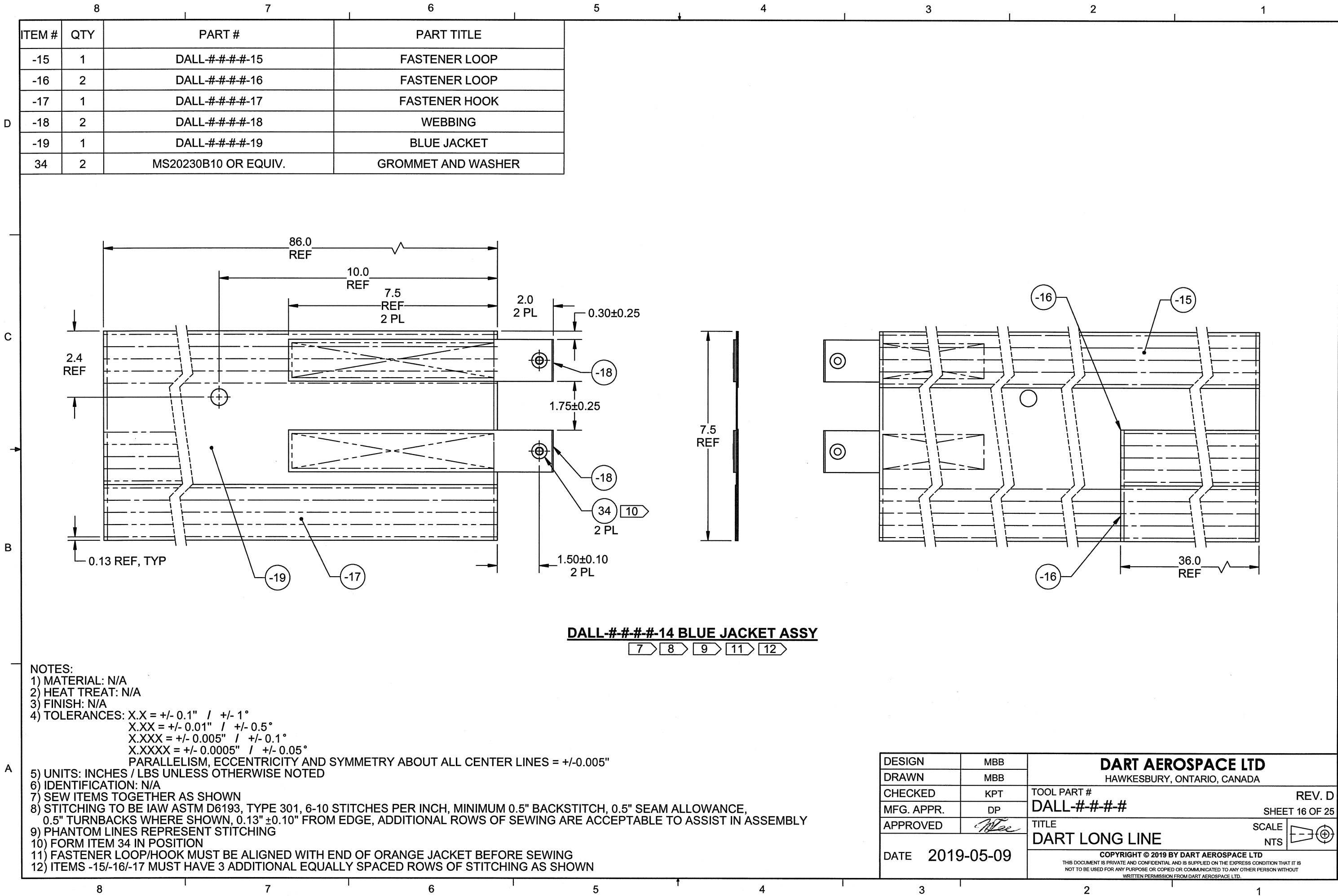


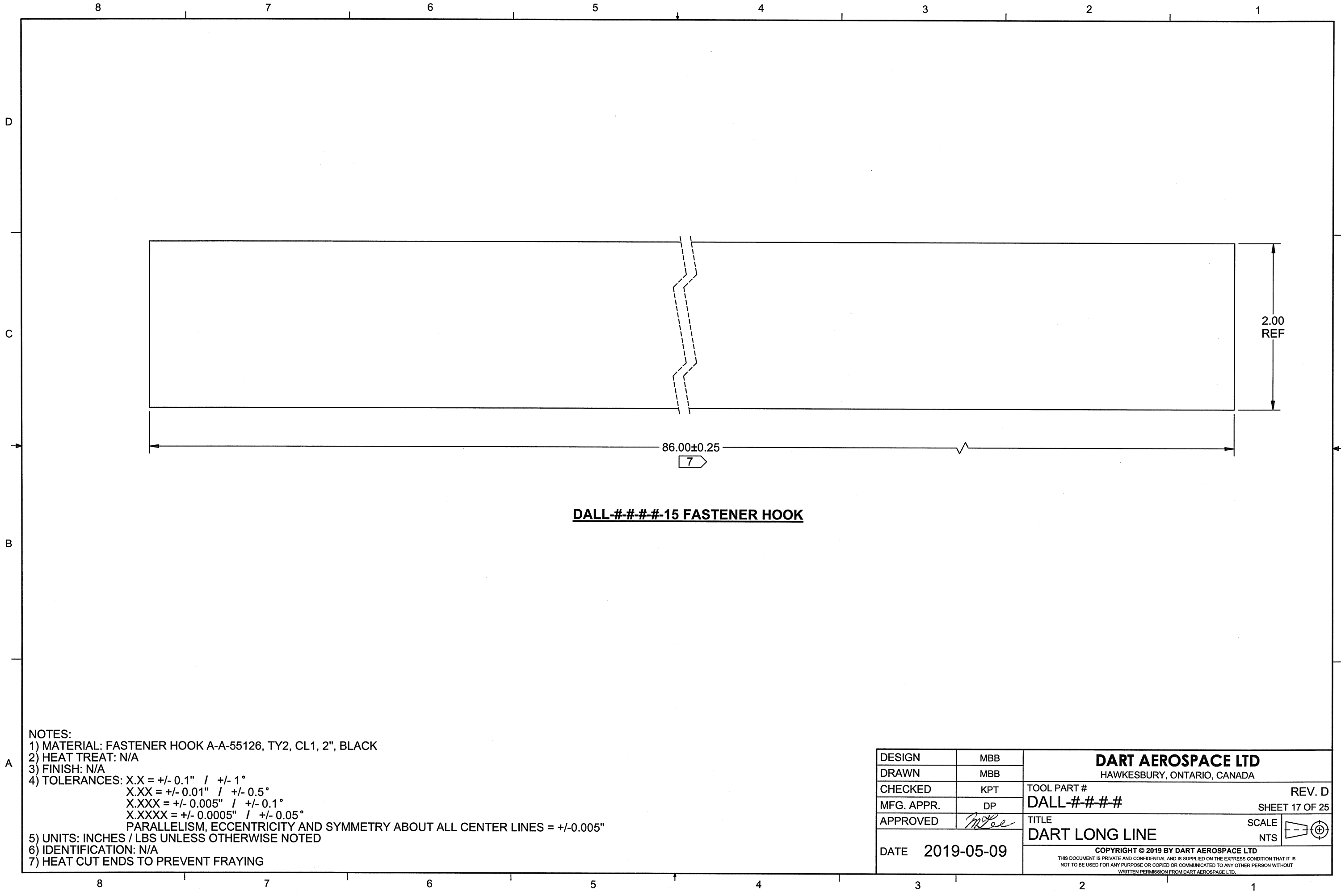


NOTES:
1) MATERIAL: FASTENER HOOK A-A-55126, TY2, CL3, 1", BLACK
2) HEAT TREAT: N/A
3) FINISH: N/A
4) TOLERANCES: X.X = +/- 0.1" / +/- 1°
 X.XX = +/- 0.01" / +/- 0.5°
 X.XXX = +/- 0.005" / +/- 0.1°
 X.XXXX = +/- 0.0005" / +/- 0.05°
 PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/- 0.005"
5) UNITS: INCHES / LBS UNLESS OTHERWISE NOTED
6) IDENTIFICATION: N/A
7) HEAT CUT ENDS TO PREVENT FRAYING


DESIGN	MBB	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	MBB		
CHECKED	KPT	TOOL PART #	REV. D
MFG. APPR.	DP	DALL-#-#-#-#	SHEET 14 OF 25
APPROVED	<i>MBB</i>	TITLE	SCALE
DATE 2019-05-09		DART LONG LINE	NTS
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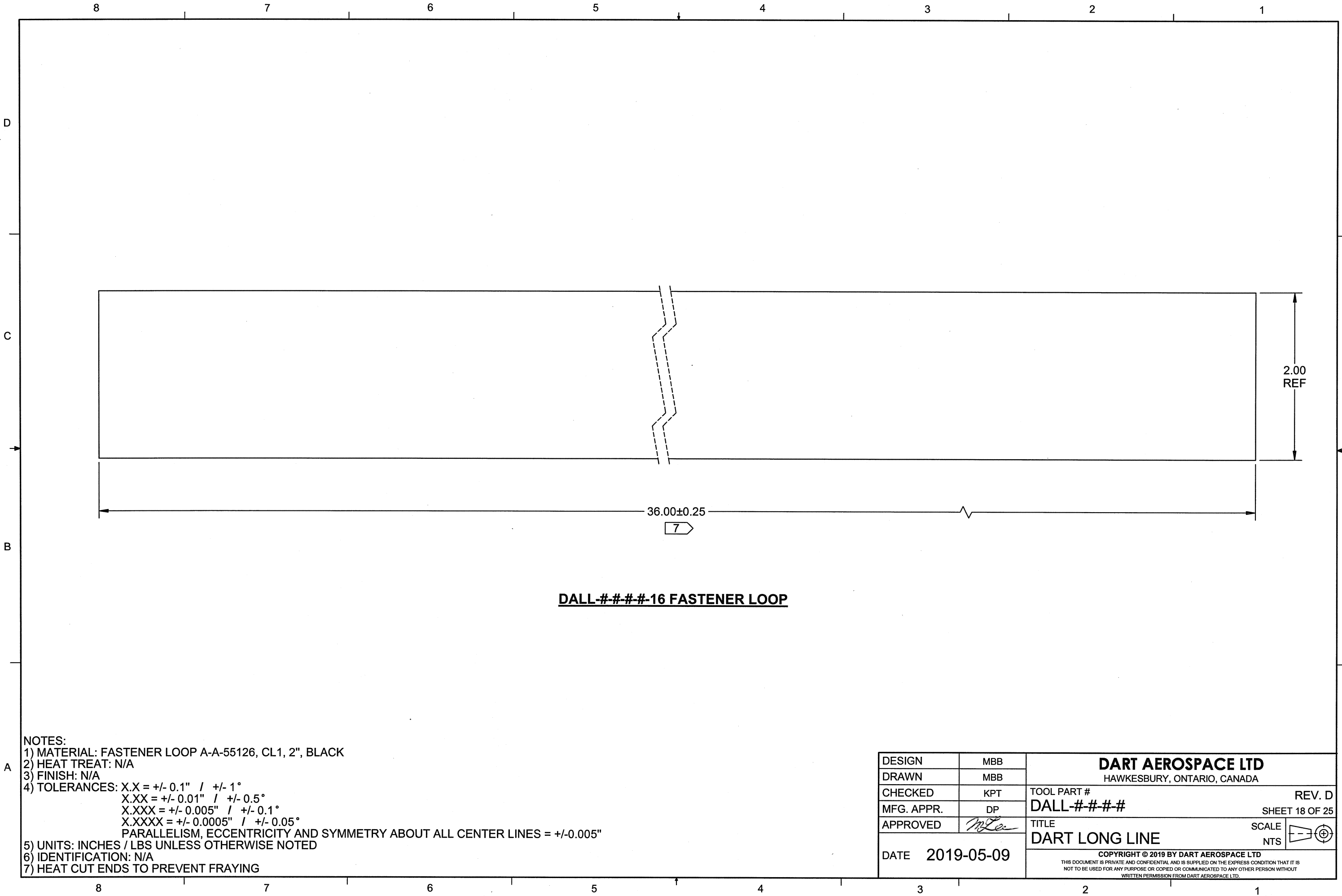






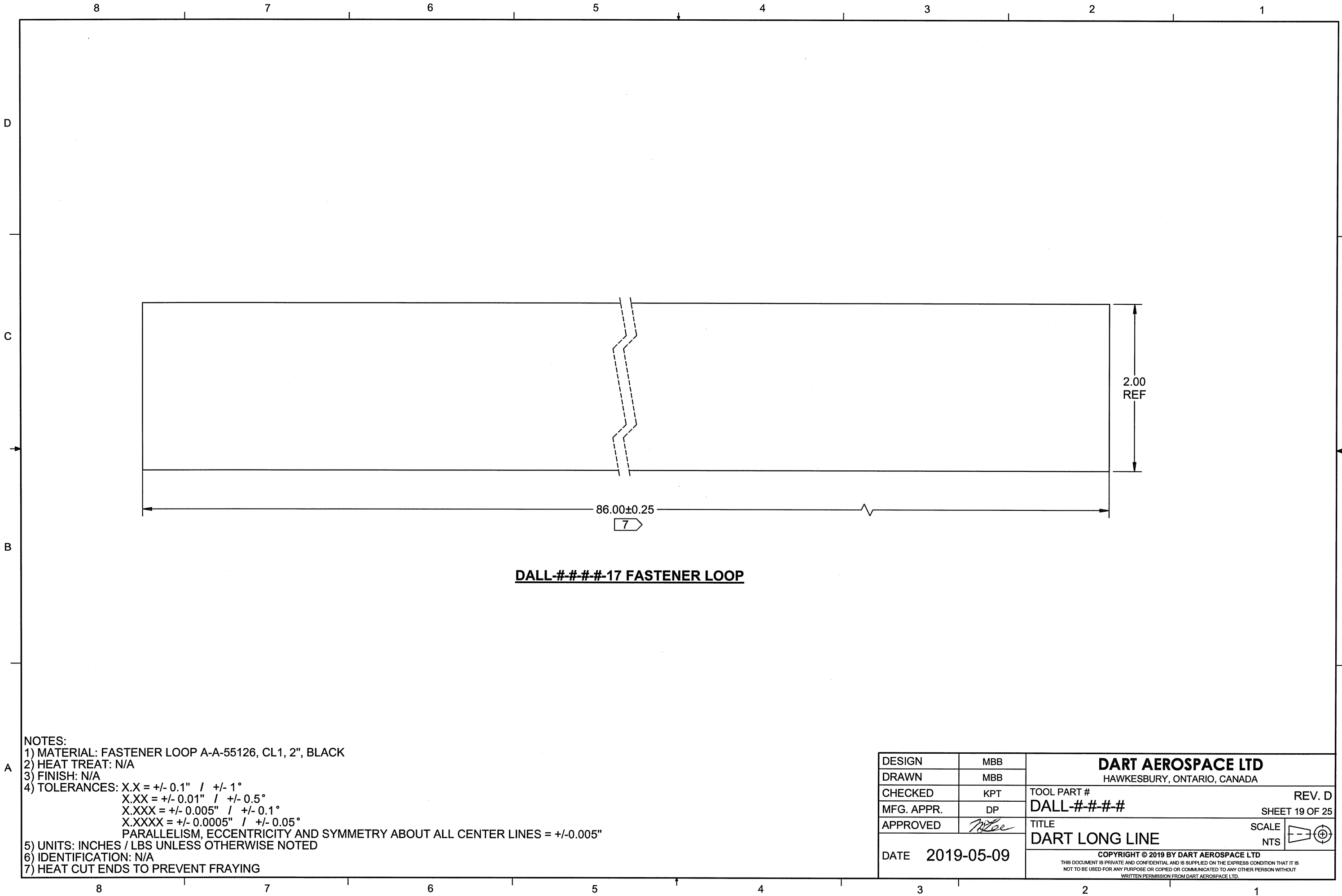
NOTES:
1) MATERIAL: FASTENER HOOK A-A-55126, TY2, CL1, 2", BLACK
2) HEAT TREAT: N/A
3) FINISH: N/A
4) TOLERANCES: X.X = +/- 0.1" / +/- 1°
X.XX = +/- 0.01" / +/- 0.5°
X.XXX = +/- 0.005" / +/- 0.1°
X.XXXX = +/- 0.0005" / +/- 0.05°
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/-0.005"
5) UNITS: INCHES / LBS UNLESS OTHERWISE NOTED
6) IDENTIFICATION: N/A
7) HEAT CUT ENDS TO PREVENT FRAYING

DESIGN	MBB	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	MBB		
CHECKED	KPT	TOOL PART #	REV. D
MFG. APPR.	DP	DALL-###-#	SHEET 17 OF 25
APPROVED	<i>M. Lee</i>	TITLE	SCALE
DATE 2019-05-09		DART LONG LINE	NTS 
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NOTES:
1) MATERIAL: FASTENER LOOP A-A-55126, CL1, 2", BLACK
2) HEAT TREAT: N/A
3) FINISH: N/A
4) TOLERANCES: X.X = +/- 0.1" / +/- 1°
X.XX = +/- 0.01" / +/- 0.5°
X.XXX = +/- 0.005" / +/- 0.1°
X.XXXX = +/- 0.0005" / +/- 0.05°
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/-0.005"
5) UNITS: INCHES / LBS UNLESS OTHERWISE NOTED
6) IDENTIFICATION: N/A
7) HEAT CUT ENDS TO PREVENT FRAYING

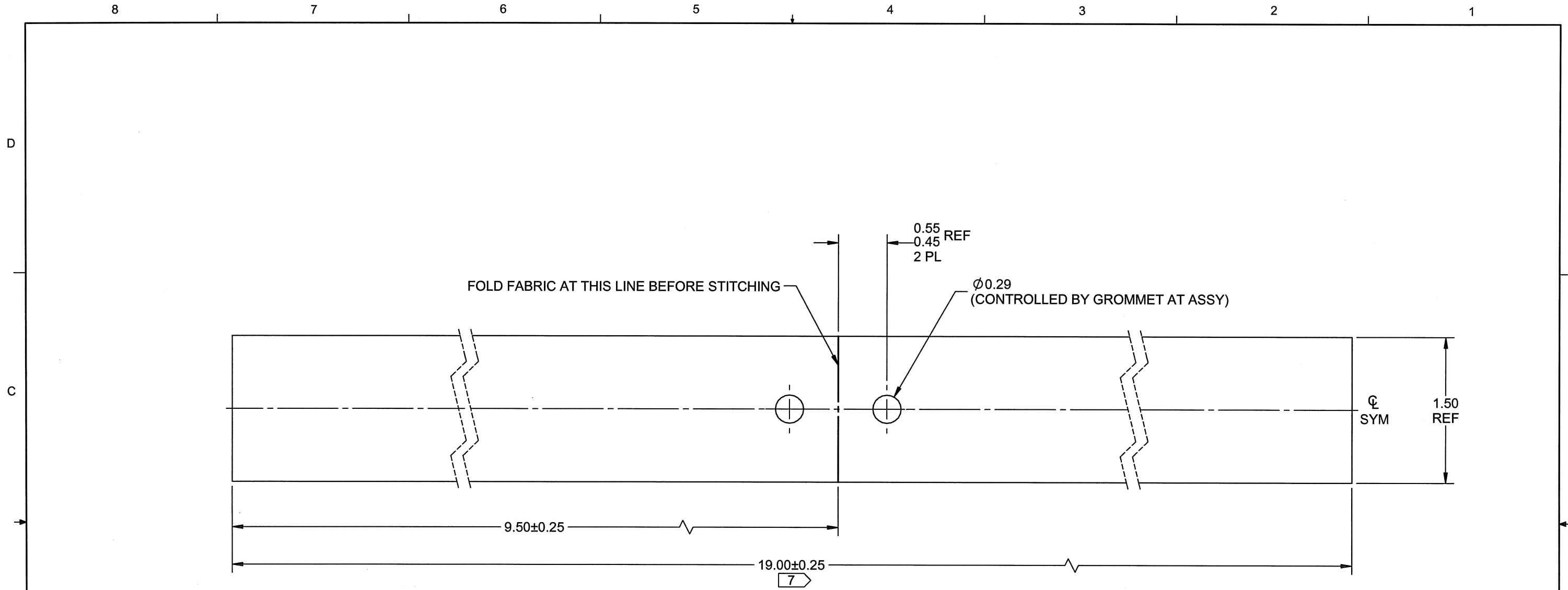
DESIGN	MBB	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	MBB		
CHECKED	KPT	TOOL PART #	REV. D
MFG. APPR.	DP	DALL-###-#	SHEET 18 OF 25
APPROVED		TITLE	SCALE
DATE 2019-05-09		DART LONG LINE	NTS
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DALL-#-#-#-17 FASTENER LOOP

- NOTES:
- 1) MATERIAL: FASTENER LOOP A-A-55126, CL1, 2", BLACK
 - 2) HEAT TREAT: N/A
 - 3) FINISH: N/A
 - 4) TOLERANCES: X.X = +/- 0.1" / +/- 1°
X.XX = +/- 0.01" / +/- 0.5°
X.XXX = +/- 0.005" / +/- 0.1°
X.XXXX = +/- 0.0005" / +/- 0.05°
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/-0.005"
 - 5) UNITS: INCHES / LBS UNLESS OTHERWISE NOTED
 - 6) IDENTIFICATION: N/A
 - 7) HEAT CUT ENDS TO PREVENT FRAYING

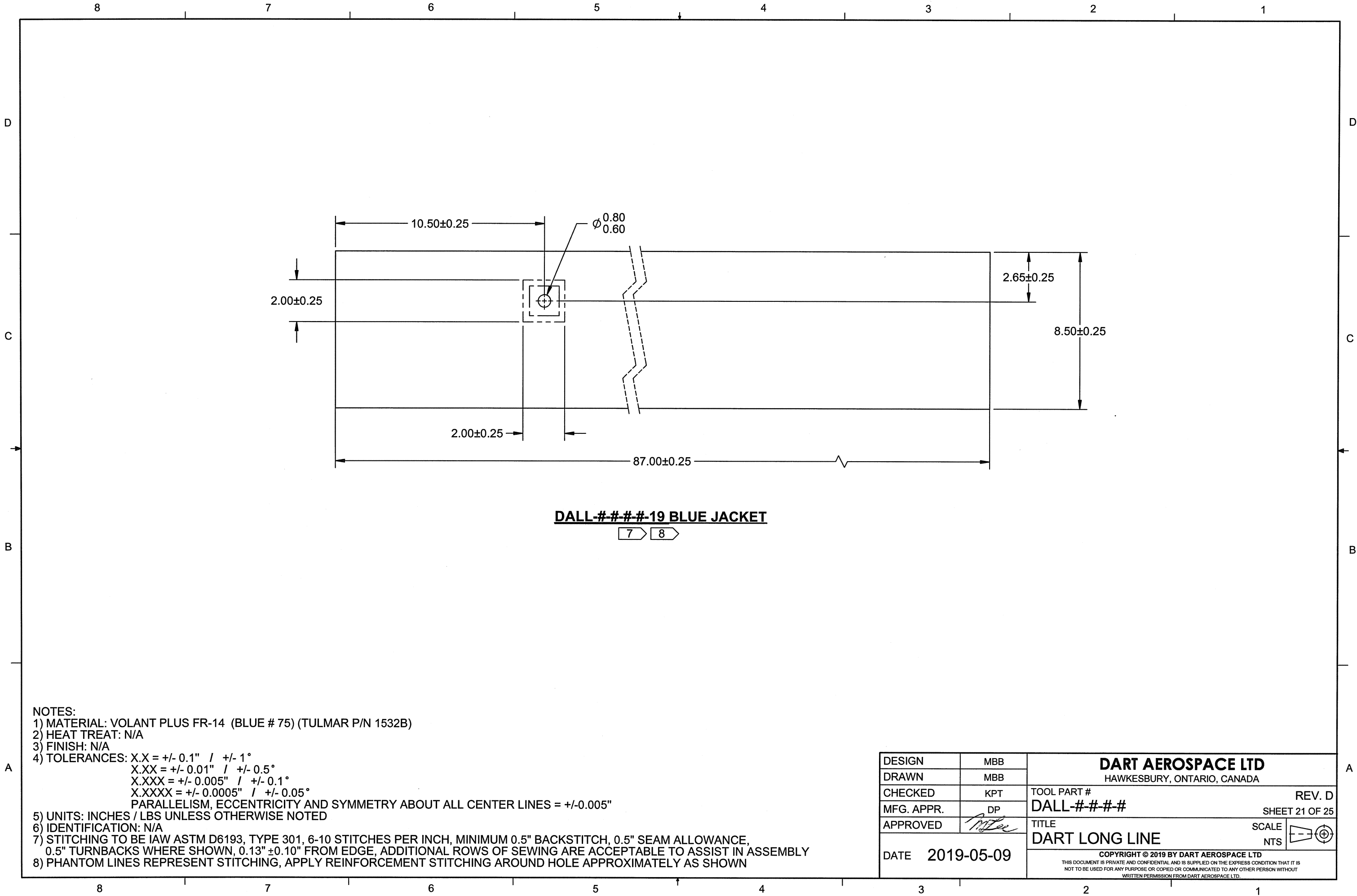
DESIGN	MBB	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	MBB		
CHECKED	KPT	TOOL PART #	REV. D
MFG. APPR.	DP	DALL-#-#-#	SHEET 19 OF 25
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DATE 2019-05-09		DART LONG LINE	NTS
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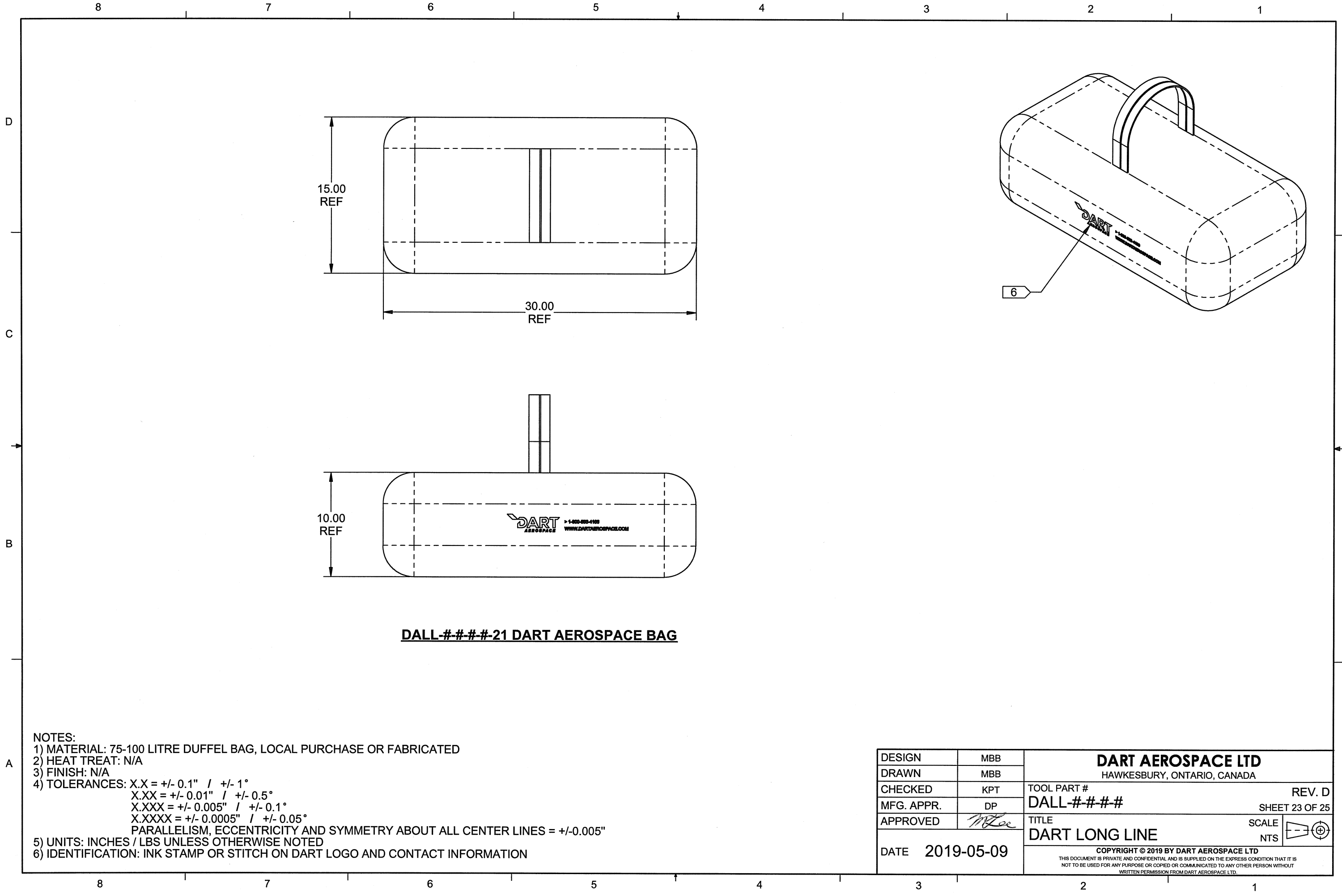


DALL-18 WEBBING

- NOTES:
- 1) MATERIAL: WEBBING NYLON BLACK, MIL-W-17337F, CL1, 1-1/2"
 - 2) HEAT TREAT: N/A
 - 3) FINISH: N/A
 - 4) TOLERANCES: X.X = +/- 0.1" / +/- 1°
X.XX = +/- 0.01" / +/- 0.5°
X.XXX = +/- 0.005" / +/- 0.1°
X.XXXX = +/- 0.0005" / +/- 0.05°
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/-0.005"
 - 5) UNITS: INCHES / LBS UNLESS OTHERWISE NOTED
 - 6) IDENTIFICATION: N/A
 - 7) HEAT CUT ENDS TO PREVENT FRAYING

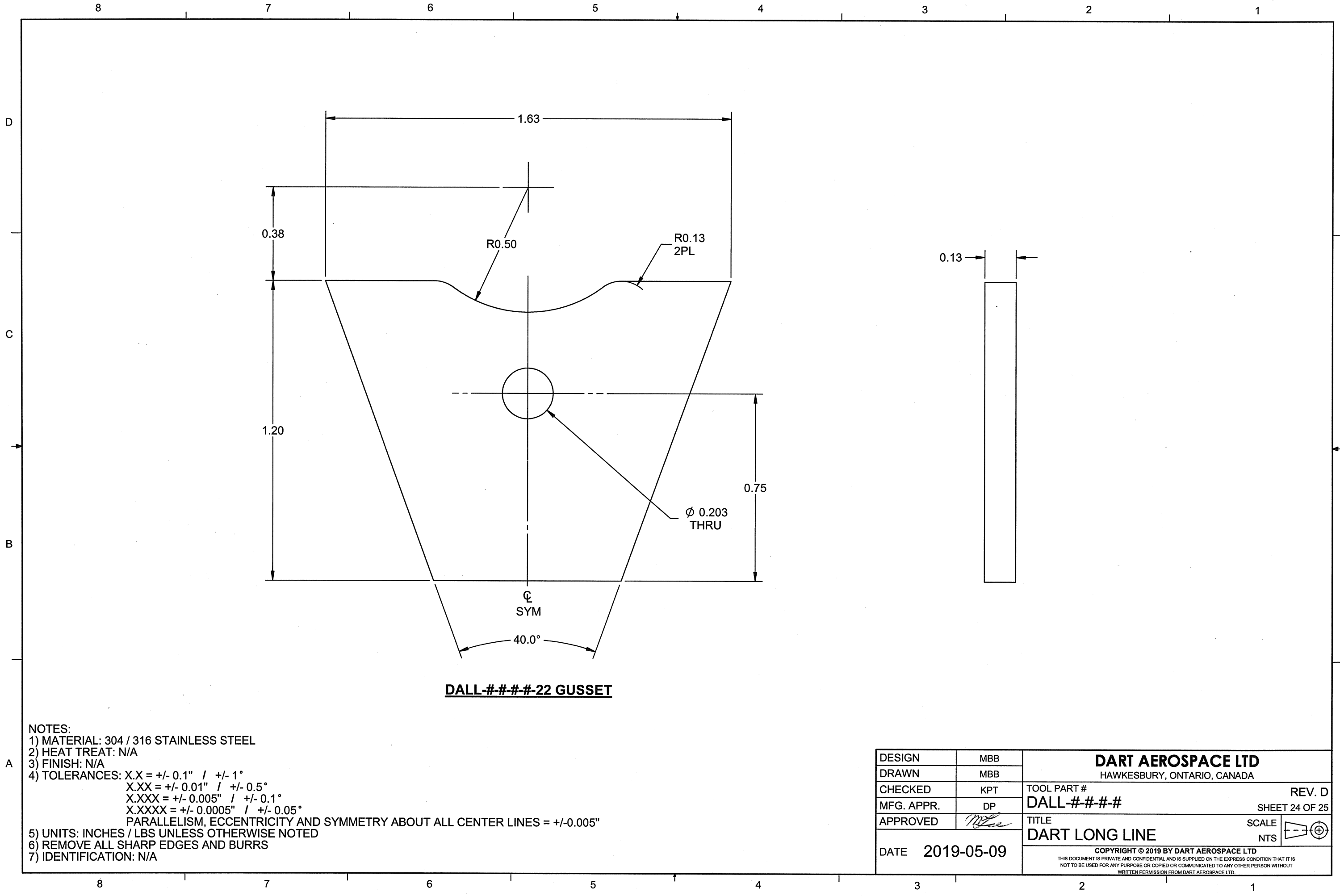
DESIGN	MBB	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	MBB		
CHECKED	KPT	TOOL PART #	REV. D
MFG. APPR.	DP	DALL-18-18	SHEET 20 OF 25
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DATE 2019-05-09		DART LONG LINE	NTS
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DALL-#-#-#-21 DART AEROSPACE BAG

NOTES:
1) MATERIAL: 75-100 LITRE DUFFEL BAG, LOCAL PURCHASE OR FABRICATED
2) HEAT TREAT: N/A
3) FINISH: N/A
4) TOLERANCES: X.X = +/- 0.1" / +/- 1°
X.XX = +/- 0.01" / +/- 0.5°
X.XXX = +/- 0.005" / +/- 0.1°
X.XXXX = +/- 0.0005" / +/- 0.05°
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/-0.005"
5) UNITS: INCHES / LBS UNLESS OTHERWISE NOTED
6) IDENTIFICATION: INK STAMP OR STITCH ON DART LOGO AND CONTACT INFORMATION



DALL-#-#-#-22 GUSSET

NOTES:
1) MATERIAL: 304 / 316 STAINLESS STEEL
2) HEAT TREAT: N/A
3) FINISH: N/A
4) TOLERANCES: X.X = +/- 0.1" / +/- 1°
X.XX = +/- 0.01" / +/- 0.5°
X.XXX = +/- 0.005" / +/- 0.1°
X.XXXX = +/- 0.0005" / +/- 0.05°
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/-0.005"
5) UNITS: INCHES / LBS UNLESS OTHERWISE NOTED
6) REMOVE ALL SHARP EDGES AND BURRS
7) IDENTIFICATION: N/A

DESIGN	MBB	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	MBB		
CHECKED	KPT	TOOL PART #	REV. D
MFG. APPR.	DP	DALL-#-#-#-	SHEET 24 OF 25
APPROVED	<i>[Signature]</i>	TITLE	SCALE
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